

**FIG. 1**

**CUSTOM MOTOR OIL – SUPPLY OPTIONS**

CUSTOMER GIVES INPUT AT:	CUSTOMER PROVIDES INPUT BY USING:	CUSTOM OIL BLENDED AT:	CUSTOM OIL SHIPPED TO:	OIL CHANGED AT:
<ul style="list-style-type: none"> <li>• HOME</li> <li>• KIOSK IN STORE</li> <li>• QUICK LUBE</li> <li>• PLACE OF WORK</li> <li>• MOBILE OIL CHANGE FACILITY</li> <li>• OTHER</li> </ul>	<ul style="list-style-type: none"> <li>• COMPUTER TERMINAL INTERNET E-MAIL</li> <li>• TELEPHONE</li> <li>• FAX</li> <li>• ORDER FORM: MAIL-IN DIRECT</li> <li>• STANDING ORDER</li> <li>• OTHER</li> </ul>	<ul style="list-style-type: none"> <li>• CENTRAL FACILITY</li> <li>• AT STORE</li> <li>• AT QUICK LUBE</li> <li>• REGIONAL / LOCAL FACILITY</li> <li>• MOBILE OIL CHANGE FACILITY</li> <li>• OTHER</li> </ul>	<ul style="list-style-type: none"> <li>• HOME</li> <li>• STORE</li> <li>• QUICK LUBE</li> <li>• GARAGE/SERVICE STATION</li> <li>• MOBILE OIL CHANGE FACILITY</li> <li>• OTHER</li> </ul>	<ul style="list-style-type: none"> <li>• HOME</li> <li>• STORE</li> <li>• QUICK LUBE</li> <li>• GARAGE/SERVICE STATION</li> <li>• MOBILE OIL CHANGE FACILITY</li> <li>• PLACE OF WORK</li> <li>• OTHER</li> </ul>

ANY COMBINATION OF THESE COULD BE USED

**FIG. 2**

Questionnaire for Custom Motor Oil  
Selection – Vehicle/Driver Background Information

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Name: \_\_\_\_\_ 9 \_\_\_\_\_ Address [include zip code] \_\_\_\_\_

10 Model Year of Vehicle [2000] ▼▲ 16

11 Engine miles [+100,000] ▼▲ 14 15

12 Type of vehicle: 16 15 14

- Car [ALFA ROMEO] ▼▲
- Light Truck [CHEVY PICKUP] ▼▲
- Heavy Truck [MACK] ▼▲
- Farm Equipment [John Deere] ▼▲
- Construction Equipment [Caterpillar] ▼▲
- SUV ▼▲

13 Car Maintenance Habits

- ☐ Under-hood maintenance
- ☐ Wash car
- ☐ Clean/Shine tires
- ☐ Vacuum interior
- ☐ Clean upholstery

13 Significant Automotive Uses

- ☐ Children carrier
- ☐ Camping
- ☐ Remote office

- next screen -

### FIG. 3

#### Questionnaire for Custom Motor Oil Selection – Vehicle Driving/Use Requirements

17 → Type of driving  
(sliding scales)

City/highway \_\_\_\_\_ / \_\_\_\_\_ 18

Distances (Winter?, Summer?) \_\_\_\_\_ / \_\_\_\_\_

In which vehicle will you use oil \_\_\_\_\_

How long do you store oil \_\_\_\_\_ 18

During which season will oil be used \_\_\_\_\_

Other items available for oil change (**Go to Figure Supplement**)

Model year, etc.

Garage (yes) (no)

Maintenance regimen

Transmission fluid

Brake fluid and brakes

Typical oil drain interval (5000 miles) ▼▲

ENTER

19

**FIG. 4**

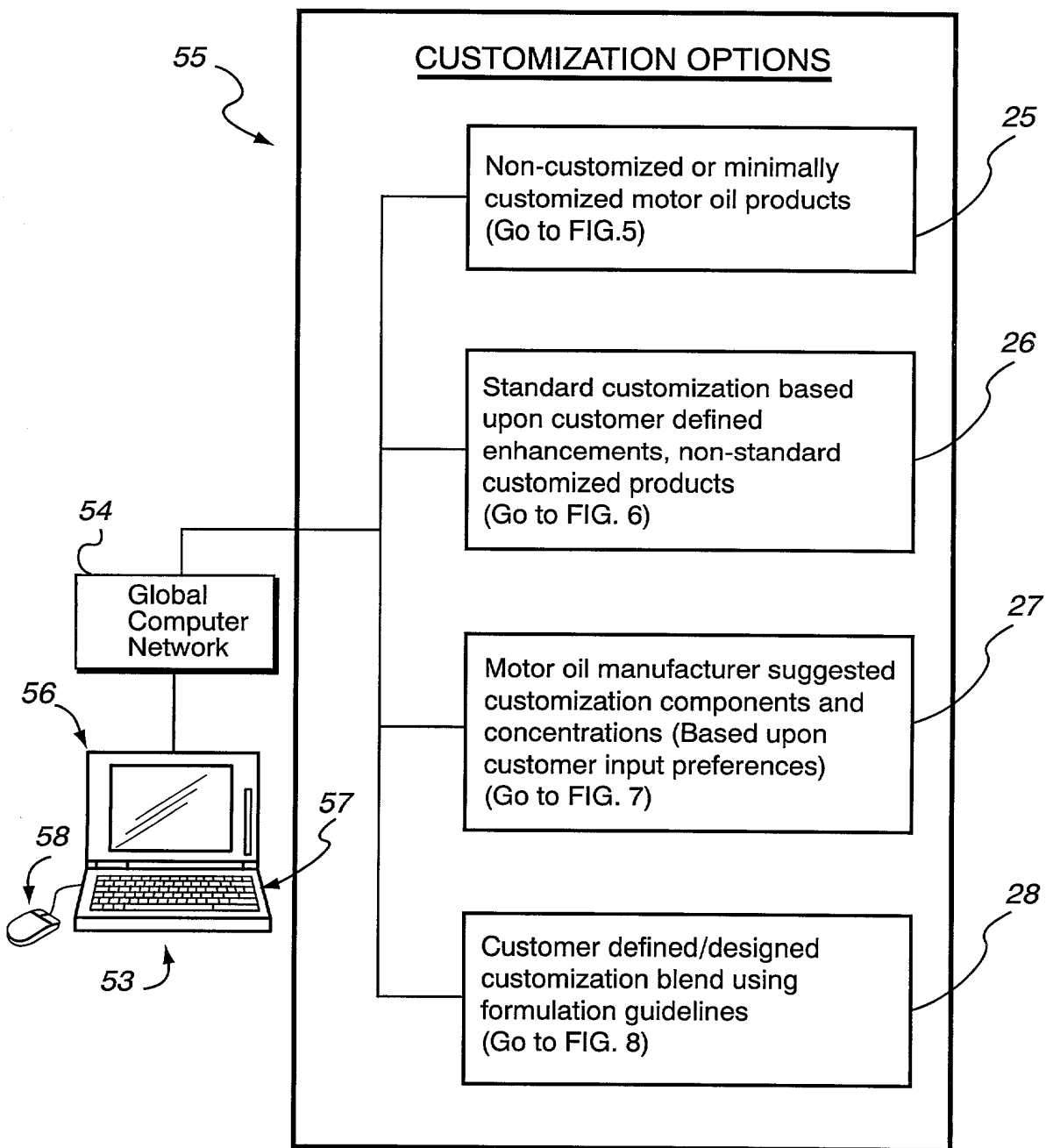
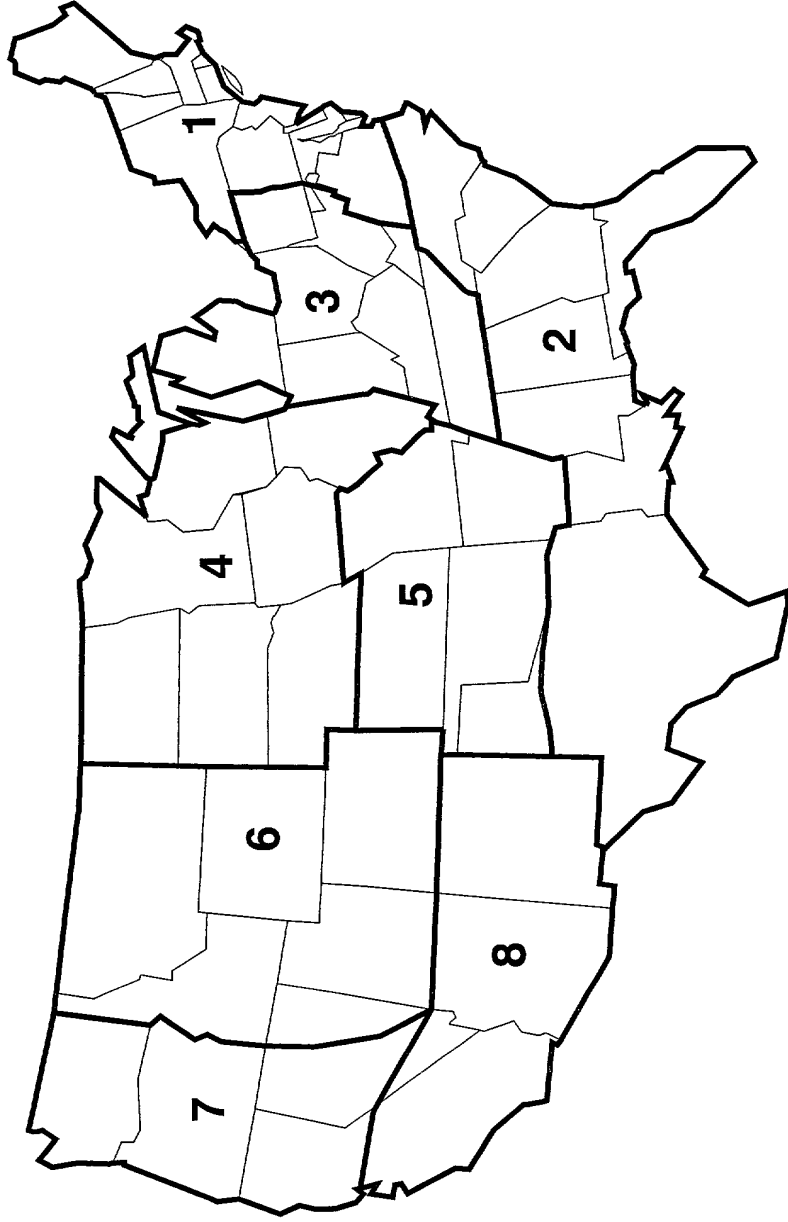


FIG. 5a



## FIG. 5b

Tutorial entitled "Fundamentals for choosing motor oil for your engine." ☐

### Choosing your motor oil

Customer choice ▼

Motor oil manufacturer's recommendation (based upon region from which order originated), See below:

Your input data indicates your oil selection will be used in region XXX.

Is this correct? Yes ☐ No ☐

If Yes, go to 23. If No, go to 22.

Refer to Region map, designate the region in which the oil will be used or for which region you wish the oil to be specified, Region ▼▲

Go to 23

Fill month ▼▲

Drain month ▼▲

Price range ▼

Product type:

Base oil Synthetic ▼

Semi-synthetic ▼

Mineral ▼

Grade Mono-grade ☐

Multi-grade ☐

Product Strongly Recommended (choose one from list according to rank order of preference) ▼▲

Product Recommended (choose one from list according to rank order of preference) ▼▲

Product Not Recommended (do not choose one from this list) ▼▲

CONTINUE

RESET VALUES

1.  $10^{-1}$  2.  $10^{-2}$  3.  $10^{-3}$  4.  $10^{-4}$  5.  $10^{-5}$  6.  $10^{-6}$  7.  $10^{-7}$  8.  $10^{-8}$  9.  $10^{-9}$  10.  $10^{-10}$  11.  $10^{-11}$  12.  $10^{-12}$  13.  $10^{-13}$  14.  $10^{-14}$  15.  $10^{-15}$  16.  $10^{-16}$  17.  $10^{-17}$  18.  $10^{-18}$  19.  $10^{-19}$  20.  $10^{-20}$  21.  $10^{-21}$  22.  $10^{-22}$  23.  $10^{-23}$  24.  $10^{-24}$  25.  $10^{-25}$  26.  $10^{-26}$  27.  $10^{-27}$  28.  $10^{-28}$  29.  $10^{-29}$  30.  $10^{-30}$  31.  $10^{-31}$  32.  $10^{-32}$  33.  $10^{-33}$  34.  $10^{-34}$  35.  $10^{-35}$  36.  $10^{-36}$  37.  $10^{-37}$  38.  $10^{-38}$  39.  $10^{-39}$  40.  $10^{-40}$  41.  $10^{-41}$  42.  $10^{-42}$  43.  $10^{-43}$  44.  $10^{-44}$  45.  $10^{-45}$  46.  $10^{-46}$  47.  $10^{-47}$  48.  $10^{-48}$  49.  $10^{-49}$  50.  $10^{-50}$  51.  $10^{-51}$  52.  $10^{-52}$  53.  $10^{-53}$  54.  $10^{-54}$  55.  $10^{-55}$  56.  $10^{-56}$  57.  $10^{-57}$  58.  $10^{-58}$  59.  $10^{-59}$  60.  $10^{-60}$  61.  $10^{-61}$  62.  $10^{-62}$  63.  $10^{-63}$  64.  $10^{-64}$  65.  $10^{-65}$  66.  $10^{-66}$  67.  $10^{-67}$  68.  $10^{-68}$  69.  $10^{-69}$  70.  $10^{-70}$  71.  $10^{-71}$  72.  $10^{-72}$  73.  $10^{-73}$  74.  $10^{-74}$  75.  $10^{-75}$  76.  $10^{-76}$  77.  $10^{-77}$  78.  $10^{-78}$  79.  $10^{-79}$  80.  $10^{-80}$  81.  $10^{-81}$  82.  $10^{-82}$  83.  $10^{-83}$  84.  $10^{-84}$  85.  $10^{-85}$  86.  $10^{-86}$  87.  $10^{-87}$  88.  $10^{-88}$  89.  $10^{-89}$  90.  $10^{-90}$  91.  $10^{-91}$  92.  $10^{-92}$  93.  $10^{-93}$  94.  $10^{-94}$  95.  $10^{-95}$  96.  $10^{-96}$  97.  $10^{-97}$  98.  $10^{-98}$  99.  $10^{-99}$  100.  $10^{-100}$

Do you wish an oil with:

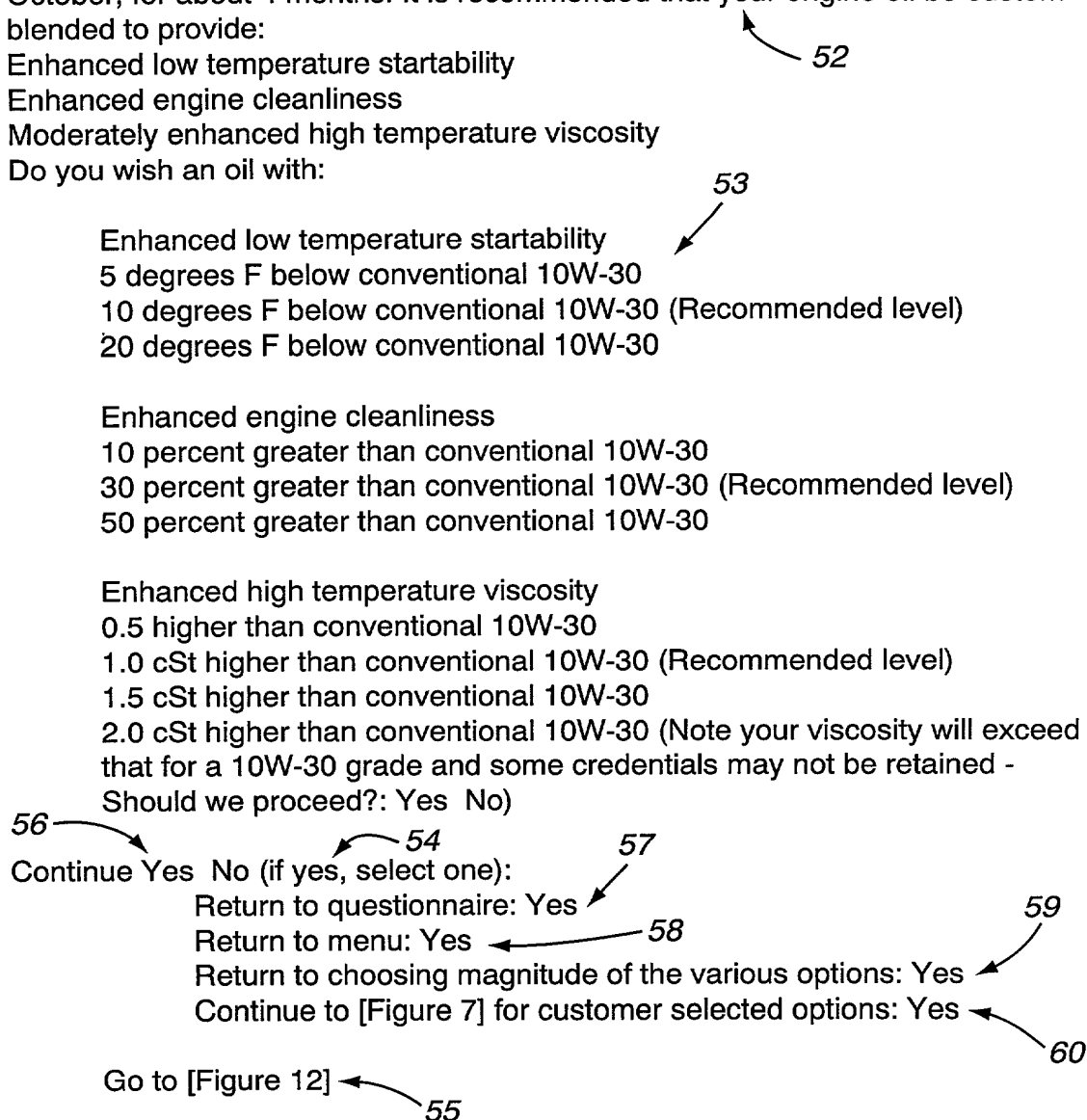
20 degrees F below conventional 10W-30

50 percent greater than conventional 10W-30

Should we proceed?: Yes No)

Continue to [Figure 7] for customer selected options: Yes

55



**FIG. 7**

Choose from among the suggested customization enhancements below.

**Enhanced low temperature startability**

5 degrees F below conventional 10W-30

10 degrees F below conventional 10W-30

20 degrees F below conventional 10W-30

**Enhanced high temperature viscosity**

0.5 cSt higher than conventional 10W-30

1.0 cSt higher than conventional 10W-30

1.5 cSt higher than conventional 10W-30

2.0 cSt higher than conventional 10W-30 (Note your viscosity will exceed that for a 10W-30 grade and some credentials may not be retained - Should we proceed?: Yes No)

**Enhanced fuel economy**

20% greater than minimum target level

30% greater than minimum target level (Recommended level)

40% greater than minimum target level

50% greater than minimum target level (Levels beyond this level not recommended).

Should we proceed?: Yes No

70% greater than minimum target level

100% greater than minimum target level

**Enhanced engine cleanliness**

20% greater than minimum target level

30% greater than minimum target level

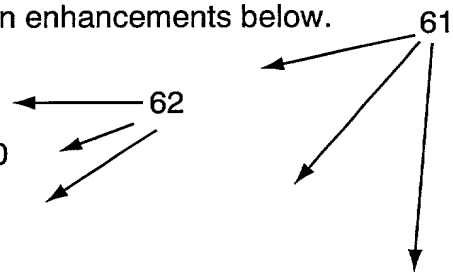
40% greater than minimum target level

50% greater than minimum target level

100% greater than minimum target level

**Extended drain capability**

Increase beyond 5,000 mile drain interval: 5% to 200% ▲▼





**FIG. 7(Cont'd)**

**Wider product viscosity range**

0W-30

0W-40

5W-40

5W-50

10W-50

10W-60

Other: \_\_\_\_\_

63

**Enhanced wear protection**

20% greater than minimum target level

30% greater than minimum target level

40% greater than minimum target level

50% greater than minimum target level

100% greater than minimum target level

**Other Enhancements**

63

64

**Use of novel or non-conventional component:**

You may choose to introduce new experimental products or non-conventional additives in your motor oil blend. If you wish to proceed, choose yes and proceed below.

Yes

Polytetrafluoro ethylene (PTFE)

Stabilized molybdenum disulfide

Stabilized vegetable oils

Special ester base stocks

65

Continue Yes No (if yes, select one):

Return to questionnaire: Yes

Return to menu: Yes

Return to choosing magnitude of the various options: Yes

66

Continue to next customization screen, [Figure 8] for customer defined component recommendations. Yes

## FIG. 8

### Enhanced engine cleanliness

For optimum response and results it may be necessary to adjust both detergent and dispersant components.

#### Detergent modification

Go to [Figures 9-11] (for performance/concentration data)

Change the detergent component level (Refer to appropriate additive response correlation Chart, Figures 9-11): -50% to 200% ▲▼

Add a second detergent component (Refer to appropriate additive response correlation Chart, Figures 9-11, Recommend using 30% more detergent component with high TBN (Total Base Number)): 0% to 200% ▲▼

#### Dispersant modification

Go to [Figures 9-11] (for performance/concentration data)

Change the dispersant component level (Refer to appropriate additive response correlation Chart, Figures 9-11) -50% to 200% ▲▼

Add additional high molecular weight dispersant (Refer to appropriate additive response correlation Chart): 0% to 200% ▲▼

### Enhanced fuel economy

Go to [Figures 9-11] (for performance/concentration data)

Change the Friction Modifier component level (Refer to appropriate additive response correlation Chart): 0% to 200% ▲▼

Add a second Friction Modifier component (Refer to appropriate additive response correlation Chart. Motor oil manufacturer recommends using 30% of Friction Modifier S, Note: using component which will darken the oil). 0% to 200% ▲▼

### Enhanced low temperature startability

### Enhanced high temperature viscosity

### Extended drain capability

## **FIG. 8(Cont'd)**

**Wider product viscosity range**

**Enhanced wear protection**

**Enhanced control of oil oxidation**

**Use of novel or non-conventional component:**

You may choose to introduce new experimental products or non-conventional additives in your motor oil blend. If you wish to proceed, choose yes and proceed below. Yes

Polytetrafluoroethylene (PTFE)

Stabilized molybdenum disulfide

Stabilized vegetable oils

Special ester base stocks

69

70

Continue Yes No (if yes, select one:)

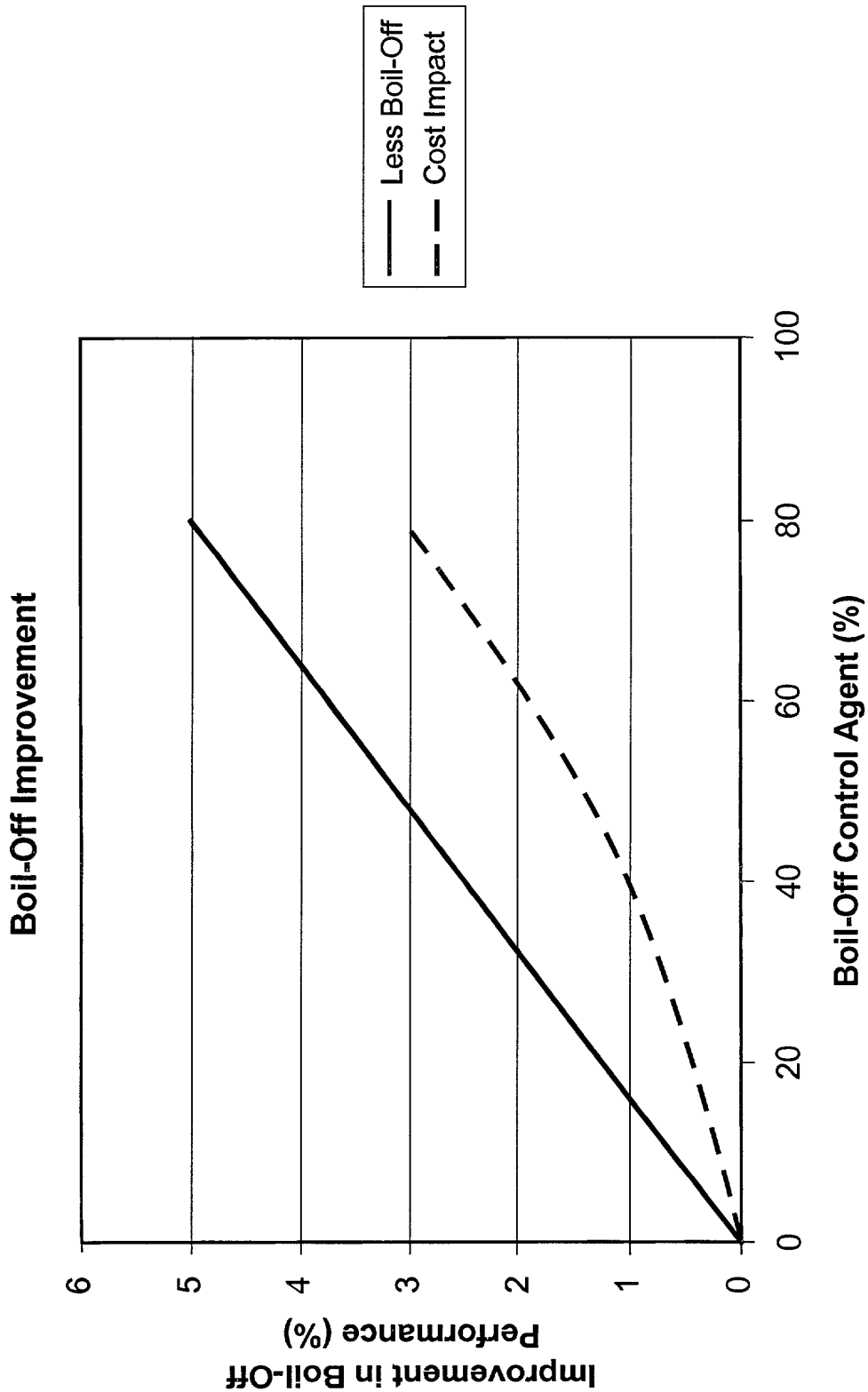
Return to questionnaire: Yes

Return to menu: Yes

Return to choosing options: Yes

[Go to Figure 12]

**FIG. 9**



**FIG. 10**

**Piston Cleanliness Improvement**

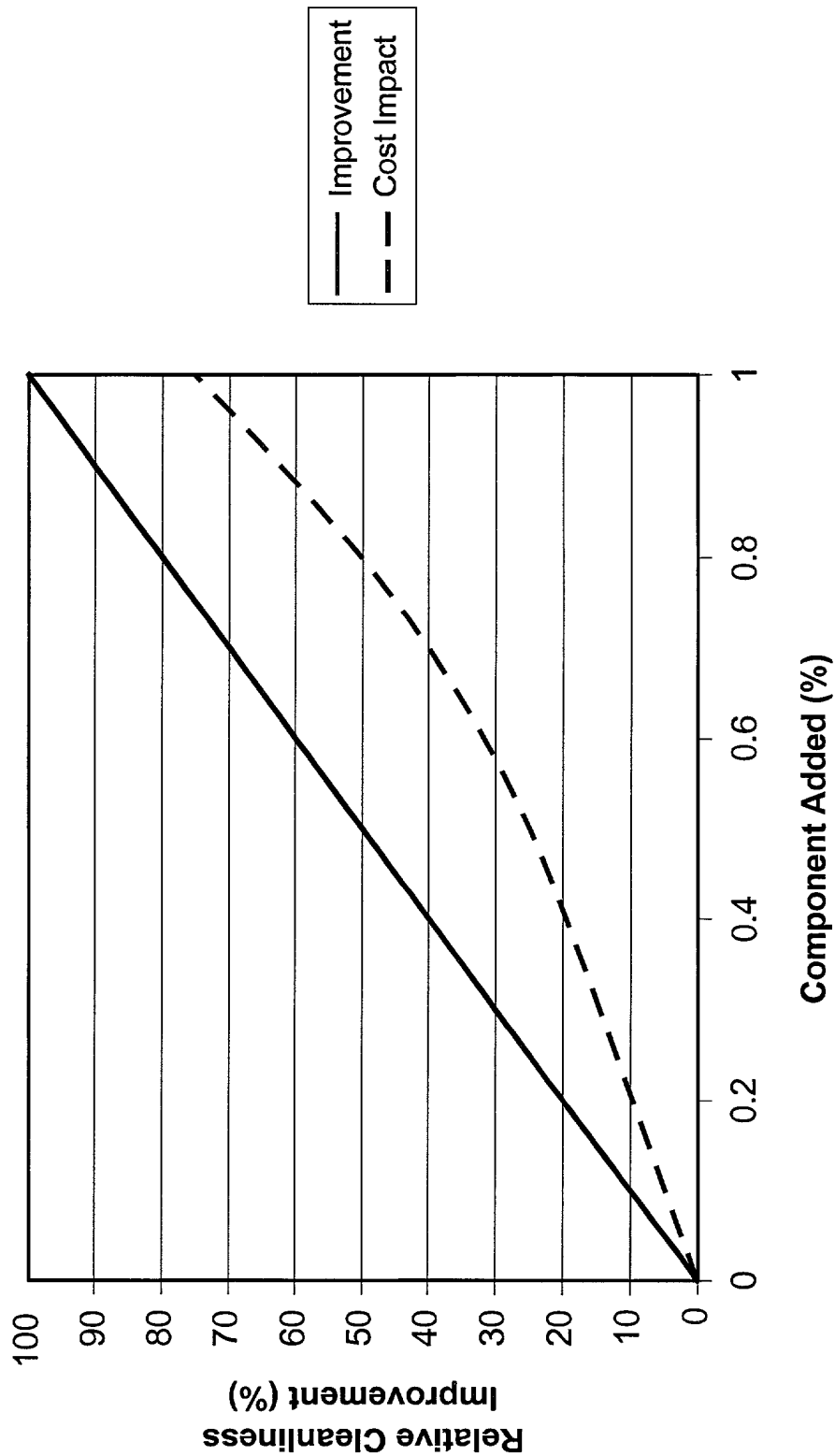


FIG. 11

Viscosity Stability Improvement

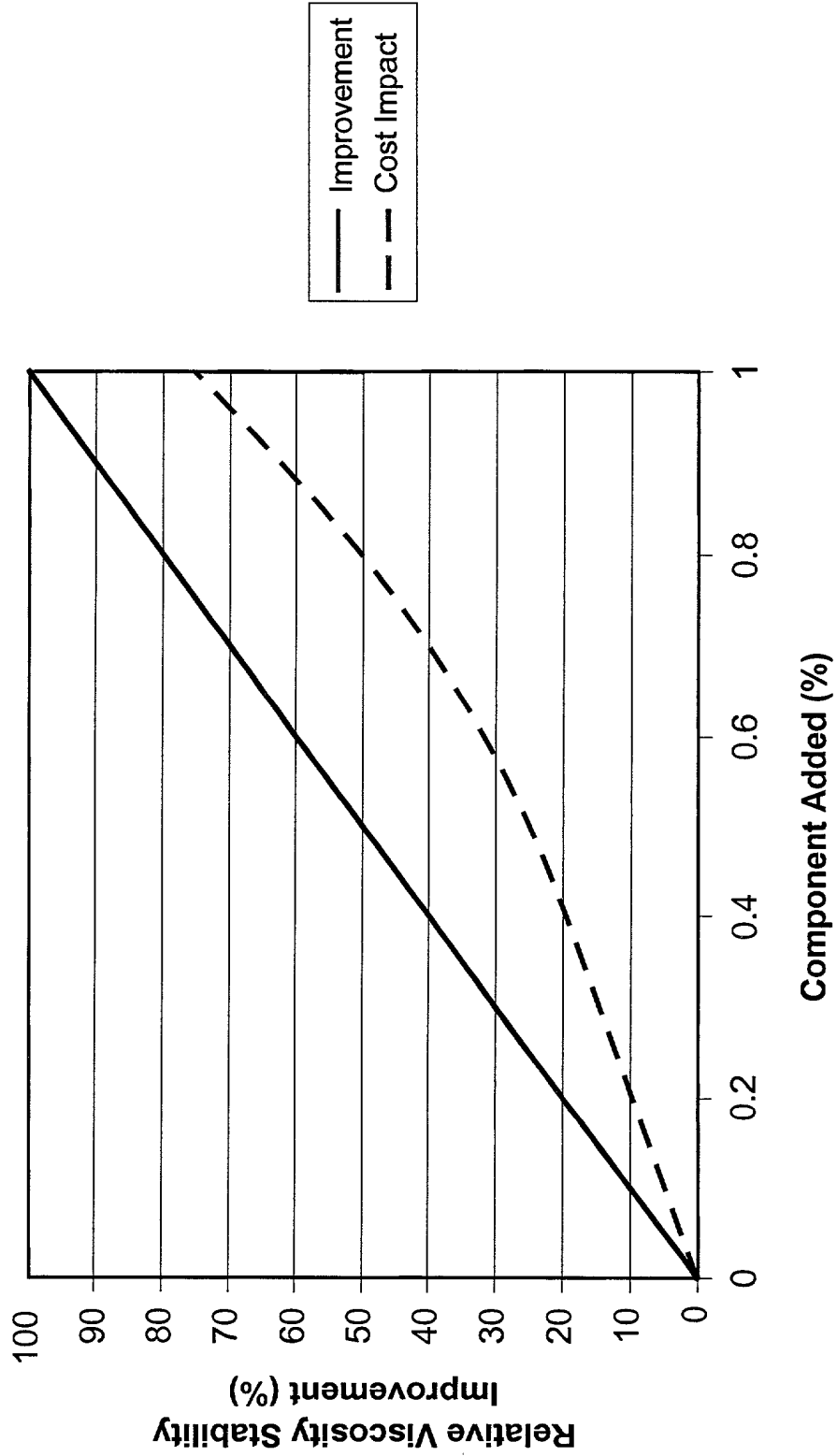
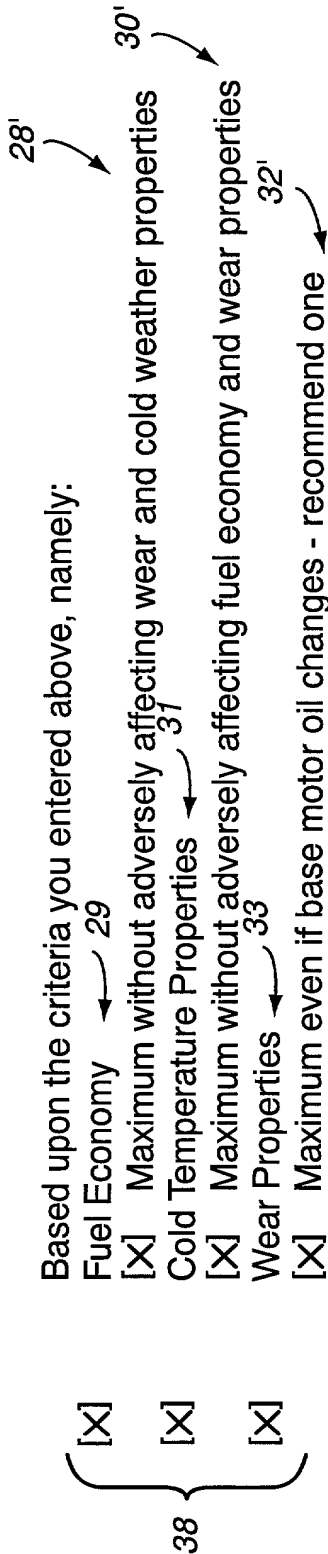


FIG. 12

FINAL MOTOR OIL SELECTED



39 { We will design a motor oil with 10W-30 motor oil which has been uptreated and formulated with 0.3% molybdenum dithiocarbamate fuel economy additive to increase fuel economy by up to 40%, 0.25% fumarate ester additive to improve the low temperature pumpability by about 10 degrees F and with 0.17% zinc dialkylidithiophosphate anti-wear additive to reduce wear by up to 50%. If this is acceptable, select the number of gallons below and click on ADD TO SHOPPING CART. If not acceptable click on RETURN TO THE MAIN MENU, or BACK.

QUANTITY

1 gallon Δ 40

ADD TO SHOPPING CART 41

BACK 42

RETURN TO MAIN MENU 43

## FIG. 13 SHOPPING CART/CHECK-OUT

Your shopping cart contains the following items:

#1: 10 gallons 10W30 motor oil which has been up-treated and formulated with 0.3% molybdenum dithiocarbamate fuel economy additive to increase fuel economy by up to 40%, 0.25% fumarate ester additive to improve the low temperature pumpability by about 10 degrees F and with 0.17% zinc dialkyldithiophosphate anti-wear additive to reduce wear by up to 50%.

PRICE: \$ XXX.XX

#2:

#3:

RETURN TO MAIN MENU TO DESIGN OTHER OILS

PROCEED TO FIGURE 16 FOR OTHER PRODUCTS/SERVICES

BACK

To check out, fill in the relevant information below, or your customer number, and click on SEND

Customer No.: \_\_\_\_\_

Name:

Type of payment: ☐ VISA ☐ Discover

Card No.

Expiration Date

Exact name on card:

Billing address on card

Shipping address for this order:

Name:

Company (if any):

Address:

City

State:

Zip:

Shipping type: ☐ Normal UPS (approximately \$Z/gallon)

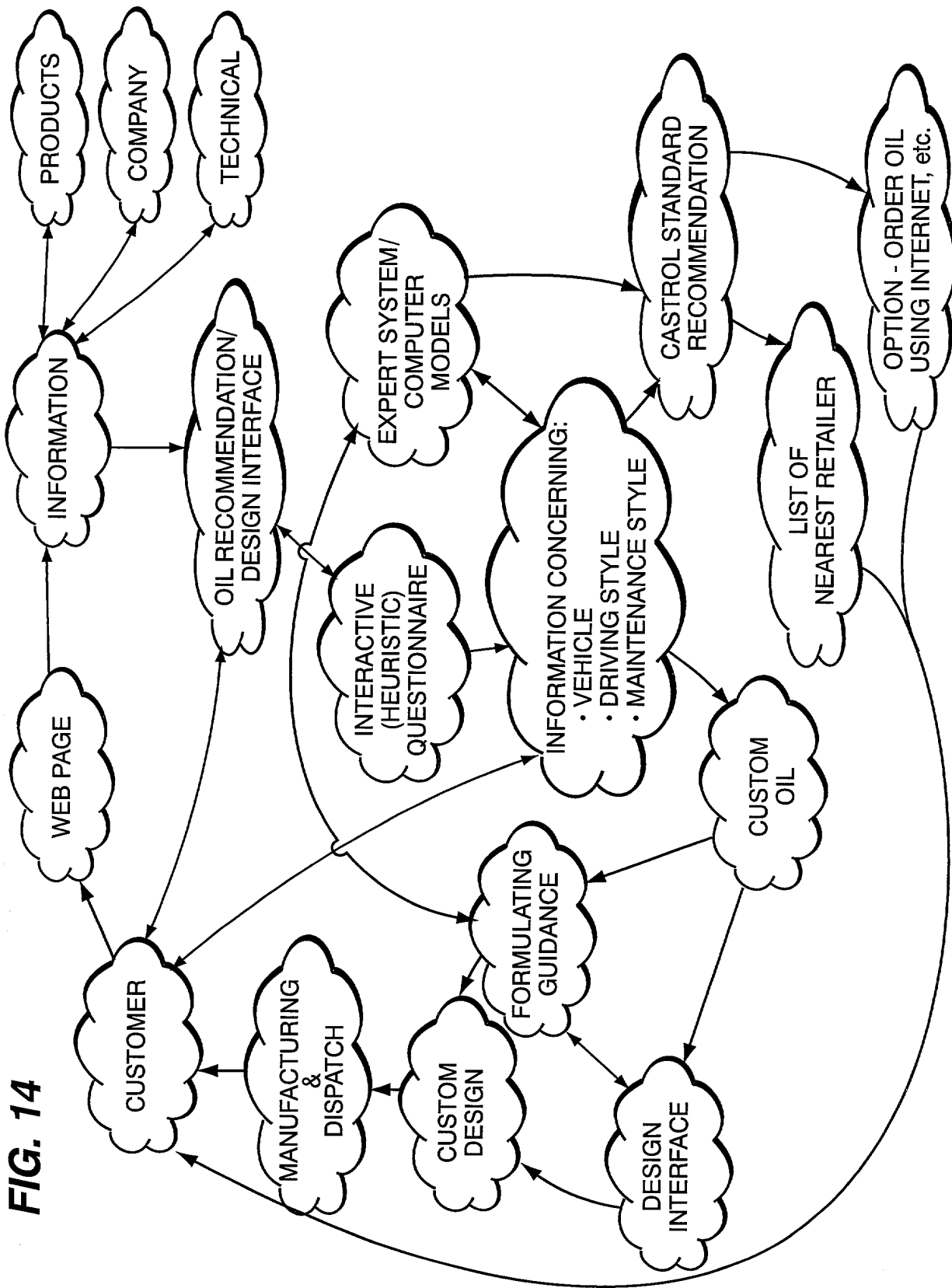
☐ Overnight courier (approximately \$ZZ/gallon)

☐ Click here if you have entered a customer number and you want the product shipped to your default shipping address

SEND

[Thank you for your order. This product will be shipped by NORMAL UPS within TEN business days from today, and your DISCOVER card has been billed \$XXX.XX for the oil, and \$YY.YY for shipping, for a Total of \$CCC.CC]





**FIG. 15**

**EXAMPLE OF SIMPLIFIED MIXING SCHEME FOR CUSTOMIZED OIL**

COLUMN 1	COLUMN 2 CUSTOMER DESIRES BASELINE PERFORMANCE	COLUMN 3 CUSTOMER DESIRES FUEL ECONOMY PERFORMANCE	COLUMN 4 CUSTOMER DESIRES ANTIWEAR PERFORMANCE	COLUMN 5 CUSTOMER DESIRES BOTH FUEL ECONOMY AND ANTIWEAR PERFORMANCE
% BASELINE MOTOR OIL	100	80	80	60
% OF 5X MAX. BLEND CONC. OF FUEL ECONOMY ADDITIVE DISSOLVED IN BASELINE MOTOR OIL; BLEND A	0	20	0	20
% OF 5X MAX. BLEND CONC. OF ANTIWEAR ADDITIVE DISSOLVED IN BASELINE MOTOR OIL; BLEND B	0	0	20	20
TOTAL %	100	100	100	100

**FIG. 16**

Automotive Products To Enhance Driving Experience

Maintenance Items

Filters  
Spark plugs  
Brake fluids  
Gear fluids  
Transmission fluid Grease  
Other

Car Care Products

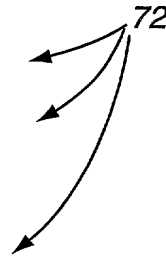
Car wash  
Wiper fluid  
Tire gloss  
Touch-up paint  
Other

Travel Service

Weather advisory  
Travel Directions and Tips  
Maps  
Other

Merchandising

Posters  
Apparel  
Designer products  
Other



Add to shopping cart

73

Return to main menu

74